IN THE CLAIMS:

1. (Currently Amended) A hydrogen gas generator for generating hydrogen from a source fuel of the hydrocarbon family, oxygen, and steam,

said hydrogen gas generator comprising:

a fuel reformer (5) with a catalyst (27) which exhibits an activity to a partial oxidation reaction of said source fuel;

wherein said source fuel, oxygen, and steam are supplied to said reformer (5) so that, within said fuel reformer (5), said partial oxidation reaction occurs on said catalyst (27) and a water gas shift reaction occurs in which CO produced in said partial oxidation reaction is a reactant.

2. (Original) The hydrogen gas generator of claim 1, wherein said water gas shift reaction is controlled such that the CO_2/CO ratio, which is the ratio of CO_2 to CO in an outlet gas of said fuel reformer (5), is not less than 0.2.

3. (Original) The hydrogen gas generator of claim 1, wherein the supply rate of source fuel and steam to said fuel reformer is set such that the H_20/C ratio, which is the ratio of the number of moles of said steam to the number of moles of carbon of said source fuel, is not less than 0.5.

4. (Original) The hydrogen gas generator of claim 3, wherein the H_20/C ratio is not more than 3.

5. (Original) The hydrogen gas generator of claim 1, wherein the outlet gas temperature of said fuel reformer (5) is not more than 800 degrees centigrade.

6. (Original) The hydrogen gas generator of claim 1, wherein the supply rate of source fuel and oxygen to said fuel reformer (5) is set such that the O_2/C ratio, which is the ratio of the number of moles of said oxygen to the number of moles of carbon of said source fuel, is not less than 0.9 times the O_2/C theoretical mixture ratio in said partial oxidation reaction.

7. (Original) The hydrogen gas generator of claim 1, wherein the supply rate of source fuel and oxygen to said fuel reformer (5) is set such that the O_2/C ratio, which is the ratio of the number of moles of said oxygen to the number of moles of carbon of said source fuel, is greater than said O_2/C theoretical mixture ratio in said partial oxidation reaction.

8. (Original) The hydrogen gas generator of claim 6, wherein said O_2/C is not more than 1.5 times said O_2/C theoretical mixture ratio.

9. (Original) The hydrogen gas generator of claim 1, wherein the supply rate of source fuel, oxygen, and steam to said fuel reformer (5) is set such that the O_2/C ratio, which is the ratio of the number of moles of said oxygen to the number of moles of carbon of said source fuel, is not less than 0.9 times said O_2/C theoretical mixture ratio in said partial oxidation reaction, and that the H_2O/C ratio, which is the ratio of the number of moles of said steam to the number of said source fuel carbon moles, is not less than 0.5.

10. (Currently Amended) A hydrogen gas generator for generating hydrogen from a source fuel of the hydrocarbon family, oxygen, and steam,

said hydrogen gas generator comprising:

a fuel reformer (5) with a catalyst (27) which exhibits an activity to a partial oxidation reaction of said source fuel;

wherein the supply rate of source fuel, oxygen, and steam to said fuel reformer (5) is set such that the O_2/C ratio, which is the ratio of the number of moles of said oxygen to the number of moles of carbon of said source fuel, is not less than 0.9 times but not more than 1.5 times the O_2/C theoretical mixture ratio in said partial oxidation, and that the H_2O/C ratio, which is the ratio of the number of moles of said steam to the number of said source fuel carbon moles, is not less than 0.5 but not more than 3, whereby, within said fuel reformer (5), said partial oxidation reaction occurs on said catalyst (27) and a water gas shift reaction occurs in which CO produced in said partial oxidation reaction is a reactant;

wherein said water gas shift reaction is controlled such that the CO_2/CO ratio, which is the ratio of CO_2 to CO in an outlet gas of said fuel reformer (5), is not less than 0.2; and

wherein the temperature of said outlet gas of said fuel reformer (5) is not more than 800 degrees centigrade.

11. (Original) The hydrogen gas generator of claim 1, wherein an active site of said catalyst (27) is formed of at least one of rhodium and ruthenium.

12. (Original) The hydrogen gas generator of claim 11, wherein said catalyst (27) is supported on a honeycomb monolith carrier.

13. (Original) A fuel cell system comprising:

a hydrogen gas generator of any one of claims 1-12; and

a fuel cell (1) capable of generating electricity by making use of hydrogen produced by said hydrogen gas generator as a fuel.

14. (Original) The fuel cell system of claim 13 further comprising:

discharged gas supply means (35) for supplying a steam-containing gas, discharged from an oxygen electrode of said fuel cell, to said fuel reformer (5) for a supply of steam to said fuel reformer (5).

15. (Original) The fuel cell system of claim 13 further comprising:

output current control means (38) for controlling the output current of said fuel cell so that the oxygen concentration and the steam concentration of a discharged gas that is supplied to said fuel reformer (5) fall within their respective given ranges.

16. (Original) The fuel cell system of claim 13 further comprising:

output current control means for controlling the output current of said fuel cell so that the coefficient of utilization of oxygen of said fuel cell ranges from 0.4 to 0.75.

17. (Original) The fuel cell system of claim 13 further comprising:

air supply means (39) for a supply of air to said fuel reformer (5).